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NOTES ON GEOGRAPHIC DISTRIBUTION

Physalaemus cicada Bokermann, 1966 (Anura: Leiuperidae): Distribution extension with new south limit and geographic distribution map

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ABSTRACT: The genus *Physalaemus* is distributed east of the Andes, from northern to southern South America. *Physalaemus cicada* is a terrestrial species with wide distribution, found mainly in the Caatinga domain, but also in the Cerrado and Atlantic Forest. Herein we present a distribution extension with a new southernmost record for the species in Minas Gerais state (municipality of Belo Horizonte), as well as a geographic distribution map.

The frog genus *Physalaemus* Fitzinger, 1826, currently comprises 45 species (Frost 2011) distributed east of the Andes, from northern to southern South America (Nascimento *et al.* 2005). *Physalaemus cicada* Bokermann, 1966 is a terrestrial species known to inhabit open areas of Caatinga, Cerrado and Atlantic Forest domains (Arzabe and Silvano 2004; Nascimento *et al.* 2005; Silveira 2006; Lisboa and Haddad 2009; Caldas *et al.* 2010) and is usually found near temporary or lentic ponds or in the water, where it makes foam nests, with larval development in temporary pools (Arzabe and Silvano 2004; Loebmann and Mai 2008; Lisboa and Haddad 2009; Caldas *et al.* 2010). This species is listed as "Least Concern" by the IUCN, because of its wide distribution, presumed large population, and the fact that it is unlikely to be declining fast enough to qualify for listing in a more threatened category, although it is a rare species over its large range (Arzabe and Silvano 2004).

Twenty localities with records of *Physalaemus cicada* were known up to date (some of them were not cited by recent papers concerning the species geographic distribution). On 1 November 2010, we collected (permit #21185-1, *Instituto Chico Mendes de Conservação da Biodiversidade* - ICMBio) six adult males and one adult female (SVL males 26.21 ± 0.61 SD, SVL female 27.8) of *P. cicada* (Figure 1) in a temporary pond (Figure 2) in the municipality of Belo Horizonte, state of Minas Gerais, southeastern Brazil (19°48'18.0" S, 43°54'18.7" W; 770 m asl). Other 10 anuran species were also recorded in the same pond; *Dendropsophus minutus* (Peters, 1872), *Dendropsophus seniculus* (Cope, 1868), *Hypsiboas faber* (Wied-Neuwied, 1821), *Phyllomedusa burmeisteri* Boulenger, 1882, *Scinax fuscovarius* (A. Lutz, 1925), *Scinax* sp. (aff. *similis*), *Physalaemus cuvieri* Fitzinger, 1826, *Leptodactylus fuscus* (Schneider, 1799), *Leptodactylus labyrinthicus* (Spix, 1824), and *Elachistocleis cesarii* (Miranda-Ribeiro, 1920). The area where the species was found is a small cerrado fragment with anthropogenic disturbance, with temporary pools, permanent streams and marshes, surrounded by urban area.

FIGURE 1. Calling adult male of *Physalaemus cicada* observed in the municipality of Belo Horizonte, state of Minas Gerais, Brazil. Photo by Antônio M. Linares.

FIGURE 2. Temporary pond where *Physalaemus cicada* was collected in Belo Horizonte. Photo by Antônio M. Linares.

Table 1. Localities with known records of *Physalaemus cicada* and their respective literature references.

	MUNICIPALITY	STATE	LATITUDE (S)	LONGITUDE (W)	ALTITUDE (METERS)	REFERENCE
1	Maracás	Bahia	13°26'28"	40°25'51"	964	Bokermann 1966
2	São José do Bonfim	Paraíba	07°11'	37°19'	240	Arzabe 1999, Vieira *et al.* 2007
3	Araruna	Paraíba	06°27'13"	25°40'49"	236	Arzabe *et al.* 2005
4	Betânia	Pernambuco	08°16'29"	38°02'03"	587	Borges-Nojosa and Santos 2005
5	Floresta	Pernambuco	08°36'04"	38°34'07"	368	Borges-Nojosa and Santos 2005
6	Juazeiro	Bahia	09°24'42"	40°29'55"	366	Nascimento *et al.* 2005
7	Carnaíba	Bahia	09°27'06"	41°52'53"	477	Nascimento *et al.* 2005
8	Curaçá	Bahia	08°59'33"	39°53'59"	363	Nascimento *et al.* 2005
9	Pedra Azul	Minas Gerais	16°00'19"	41°17'50"	632	Nascimento *et al.* 2005
10	Matias Cardoso	Minas Gerais	14°51'17"	43°55'19"	454	Nascimento *et al.* 2005
11	Brejo Santo	Ceará	07°29'36"	38°59'14"	385	Nascimento *et al.* 2005
12	João Pinheiro	Minas Gerais	17°43'59"	46°10'00"	660	Silveira 2006
13	Lençois	Bahia	12°33'47"	41°23'18"	453	Santana and Juncá 2007
14	Cabaceiras	Paraíba	7°29'20"	36°17'93"	385	Vieira *et al.* 2007
15	São João do Cariri	Paraíba	7°23'26"	36°32'01"	442	Vieira *et al.* 2007
16	Nova Russas	Ceará	04°41'07"	40°33'56"	270	Loebmann and Mai 2008
17	São José da Tapera	Alagoas	09°33'28"	37°22'51"	255	Lisboa and Haddad 2009
18	Serra da Guia	Sergipe	09°58'52"	37°52'05"	727	Caldas *et al.* 2010
19	Grota do Angico	Sergipe	09°39'50"	37°40'57"	200	Caldas *et al.* 2010
20	Morro do Chapéu	Bahia	11°33'08"	41°09'27"	1007	Leite *et al.* 2010
21	Belo Horizonte	Minas Gerais	19°48'18"	43°54'18"	770	New Record

This finding represents a new southern limit in the distribution of the species (Table 1; Figure 3) (as well as the third highest altitudinal record), *ca*. 331 km southeast from João Pinheiro (Silveira 2006), the nearest locality from the new record and the previously southernmost record for the species, and *ca*. 799 km southwest from Maracás, the type locality. Voucher specimens were deposited at the herpetological collection of the Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil (UFMG Amphibia 7829-7835).

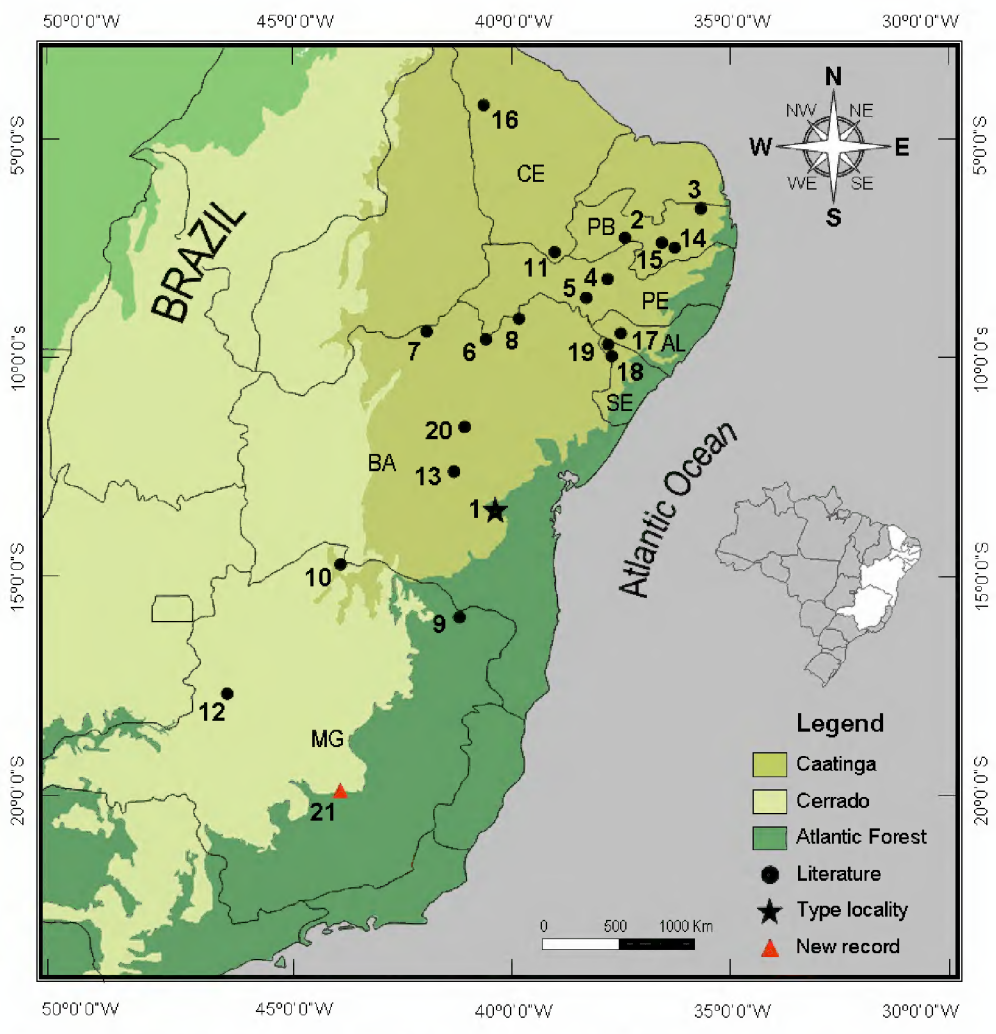

Figure 3. Geographic distribution map of *Physalaemus cicada*. Star = type locality; Black circles = literature data; Red triangle = new record (see Table 1). States abbreviations: MG = Minas Gerais; BA = Bahia; SE = Sergipe; AL = Alagoas; PE = Pernambuco; PB = Paraíba; CE = Ceará.

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Literature Cited

Arzabe, C. 1999. Reproductive activity patterns of anurans in two different altitudinal sites within the Brazilian Caatinga. *Revista Brasileira de Zoologia* 16(3): 851-864.

Arzabe C. and D. Silvano. 2004. *Physalaemus cicada*. *In* IUCN 2010. *IUCN Red List of Threatened Species. Version 2010.4*. Electronic database accessible at www.iucnredlist.org. Captured on 11 October 2011.

Arzabe, C., G. Skuk, G.G. Santana, F.R. Delfim, Y.C.C. Lima, and S.H.F. Abrantes. 2005. Herpetofauna da Área de Curimataí, Paraíba; p.259-274 *In* F.S. Araújo, MJ.N. Rodal and M.R.V. Barbosa (ed.). *Análise das variações da biodiversidade do bioma Caatinga*. Brasília: Ministério do Meio Ambiente.

Borges-Nojosa, D.M. and E.M. Santos. 2005. Herpetofauna da área de Betânia e Floresta, Pernambuco; p275-289 *In* F.S. Araújo, M.J.N. Rodal and M.R.V. Barbosa (ed.). *Análise das variações da biodiversidade do bioma Caatinga*. Brasília: Ministério do Meio Ambiente.

Bokermann, W.C.A. 1966. Notas sobre três espécies de *Physalaemus* de Maracás, Bahia (Amphibia, Leptodactylidae). *Revista Brasileira de Biologia* 26(3): 253-259.

Caldas, F.L.S., C.B. De-Carvalho, D.O. Santana, R.A. Santos, B.D. Silva and R.G. Faria. 2010. Amphibia, Anura, Leiuperidae, *Physalaemus cicada* Bokermann, 1966: First records fort the state of Sergipe. *Check List* 6(3): 427-428.

Frost, D.R. 2011. *Amphibian Species of the World: an Online Reference. Version 5.5 (31 January, 2011)*. Electronic Database accessible at http://research.amnh.org/vz/herpetology/amphibia/ American Museum of Natural History, New York, USA. Captured on 27 April 2011.

Leite, F.S.F., F.A. Juncá and P.C. Eterovick. 2010. Status do conhecimento, endemismo e conservação de anfíbios anuros da Cadeia do Espinhaço, Brasil. *Megadiversidade* 4(1-2): 158-176.

Loebmann, D. and A.C.G. Mai. 2008. Amphibia, Anura, Leiuperidae, *Physalaemus cicada*: Distribution extension in the state of Ceará, Brazil. *Check List* 4(4): 392-394.

Lisboa, B.S. and C.F.B. Haddad. 2009. Amphibia, Anura, Leiuperidae, *Physalaemus cicada* Bokermann, 1966: Distribution extension and geographic distribution map. *Check List* 5(3): 699-701.

Nascimento, L.B., U. Caramaschi and C.A.G. Cruz. 2005. Taxonomic review of the species groups of the genus *Physalaemus* Fitzinger, 1826 with revalidation of the genera *Engystomops* Jiménez-De-La-Espada, 1872 and *Eupemphix* Steindachner, 1863 (Amphibia, Anura, Leptodactylidae). *Arquivos do Museu Nacional* 63(2): 297-320.

Santana A.S. and F.A. Juncá. 2007. Diet of *Physalaemus* cf. *cicada* (Leptodactylidae) and Bufo granulosus (Bufonidae) in a semideciduous forest. Brazilian Journal of Biology 67(1): 125-131.

Silveira, A.L. 2006. Anfíbios do município de João Pinheiro, uma área de cerrado no noroeste de Minas Gerais, Brasil. *Arquivos do Museu Nacional* 64(2): 134-139.

Vieira, W.L.S., C. Arzabe and G.G. Santana. 2007. Composição e distribuição espaço-temporal de anuros no cariri paraibano, nordeste do Brasil. *Oecol. Bras.* 11(3): 383-396.

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